Cook, during 1896, has just been issued from the Mysore Government Central Press. In addition to meteorological statistics, the volume contains several plates, upon which the observations are represented graphically. The Report of the Meteorological Service of Canada for the year 1890 was also received a few days ago, together with a report on the observations made during 1895. Both of these reports are almost completely taken up with rows of figures referring to the meteorology of the Dominion.

THE Manchester Museum, Owens College, has just published, as a museum handbook, Parts ii. and iii. of a Catalogue of the Hadfield Collection of Shells from the Loyalty Islands. Since the first part of the catalogue was published, further consignments of shells have been received at the museum, the number of species recorded being thus increased from 630 to 860. The complete catalogue should be of considerable value to conchologists, as the collection of shells described in it is the largest and most important that has been received in this country from the Loyalty Islands.

THE first number of the thirty-second volume of the *American Naturalist* marks the issue of the magazine in a new and more attractive form. It is the purpose of the editors to make the periodical a means of encouraging the movement towards a closer union of the natural sciences. Superficial observations and poorly-grounded speculations are not to be published in its pages, but only articles and other contributions which have significance from various points of view. This ideal is a commendable one, and it remains for American naturalists to help the journal to attain it.

THE current number of the *Journal of the Royal Microscopical Society* (published bi-monthly on the third Wednesday in February, April, June, August, October and December) contains the tenth and concluding part of Mr. F. Chapman's very important account of the Foraminifera of the Gault of Folkstone. The greater part of the number is, as usual, occupied by the summary of recent researches in zoology, botany, and microscopy (structural and applied). The object aimed at is to give a brief abstract of every important paper (not purely systematic) in these departments of science, each section being under the care of a specialist sub-editor. The paragraphs on bacteriology are especially full and complete.

UNDER the title of the "Universal Lamp Time Chart," Mr. D. E. Benson, of Southport, is publishing an accurate and ingenious chart, constructed by Mr. G. Napier Clarke and himself, to show graphically the time at which cyclists must light up on any day of the month in any part of the British Isles. Separate charts are required for each month, and also for England and Wales, Scotland and Ireland; but though this will probably prevent the charts from being widely used, the idea of representing by a graphic construction the times for lighting and extinguishing lamps in different latitudes and longitudes in the British Isles is so good, that the authors deserve encouragement. Another publication in which those of our readers who ride cycles will be interested is "The Cyclist's Pocket Book" (Archibald Constable and Co.). The book contains a large amount of useful information and memoranda on the practice of cycling, and a few hints on the initial treatment of the commoner casualities to which cyclists are liable.

THE additions to the Zoological Society's Gardens during the past week include two Australian Sheldrakes (*Tadorna tadornoides*) from Australia, two Chinese Quails (*Coturnix chinensis*) from China, six Pintail (*Dafila acuta*), European, purchased; a Great Kangaroo (*Macropus giganteus*), an Australian Cassowary (*Casuarius australis*) from Australia, deposited.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN MARCH 1898:—

March 1. 8h. 49m. Jupiter's Sat. IV. in conjunction S. of planet.
2. 10h. 10m. to 12h. 33m. Jupiter's Sat. III. in transit.
2. 10h. 51m. to 12h. 33m. Jupiter with only one visible satellite.
2. 13h. 40m. to 14h. 36m. B.A.C. 2238 (mag. 6·5) occulted by the moon.
4. 7h. 10m. to 8h. 29m. d^1 Cancri (mag. 5·9) occulted by the moon.
4. 8h. 44m. Minimum of β Persei (Algol).
9. 11h. 12m. to 11h. 51m. *q* Virginis (mag. 5·7) occulted by the moon.
9. 13h. 29m. to 15h. 14m. Jupiter with only one visible satellite.
9. 13h. 29m. to 15h. 53m. Jupiter's Sat. III. in transit.
9. 14h. 12m. Jupiter's Sat. IV. in conjunction N. of planet.
13. 14h. 38m, to 15h. 49m. α Scorpii (Antares, mag. 1·1) occulted by the moon.
15. Illuminated portion of disc of Venus = 0·993.
,, ,, ,, Mars = 0·968.
16. 16h. 46m. Jupiter's Sat. III. begins transit.
16. 16h. 46m. to 16h. 58m. Jupiter with only one visible satellite.
20. Pons-Winnecke's comet due at perihelion.
21. Minor axis of Saturn's outer ring 17″·63.
24. 10h. 27m. Minimum of β Persei (Algol).
25. 12h. Jupiter in opposition to the sun.
Equatorial diameter = 44″·95.
Polar ,, = 42″13.
26. 2h. Mercury in conjunction with Venus. Mercury 1° 14′ N.
26. 9h. 24m. Near approach of 23 Tauri (mag. 4·2) to the moon.
27. 7h. 16m. Minimum of β Persei (Algol).
30. 11h. 13m. to 12h. 14m. δ Geminorum (mag. 3·7) occulted by the moon.

ANOTHER LUNAR HOAX?—From very early times the moon has frequently been selected as a suitable object upon which to exercise the imagination or base an elaborate hoax. We may remember that Hubert gravely declared to King John "that five moons were seen to-night: four fixed: and the fifth did whirl about the other four, in wondrous motion." Such rough descriptions were good enough for the times in which they were uttered; but in days of more exact knowledge, the lunar fable must be prepared with greater elaboration and decked in a more scientific garb. When this century was young, a tale obtained some credence, because it was artistically disguised, concerning what astronomers could see on the moon's surface. It was reported that Sir David Brewster and Sir John Herschel had seen a lunar forest with trees resembling "the yews grown in English churchyards," and a "lunar ocean breaking in large white billows upon the strand, while the action of very high tides was quite manifest upon the face of the cliffs for more than a hundred miles." Now, at the end of the century, comes the latest lunar myth, and it necessarily must be surrounded with still greater nicety of detail, and clothed with an accurate terminology.

The author of the alleged discovery in this instance is Dr. Georg Waltemath, an astronomer of Hamburg, and his assertion is, that there is evidence of the existence of a second moon, circling about the earth, but with such low reflective power that it has usually escaped observation even when in opposition. The author has perceived the desirability of making this hypothetical moon do a useful work in celestial mechanics, by explaining that the difference between the observed and computed secular acceleration of the moon's mean motion arises from the action of the newly discovered body. Perhaps it might also, with a little art, be made to explain the motion of the perihelion of Mercury. A new comer who is able to remove some existing difficulties, is naturally more welcome than one who might introduce fresh disturbances. Therefore the mass must not be very great, and Dr. Waltemath assigns to the new body that he has discovered or deduced, a mass of 1/80 of that of the moon, and a diameter of 700 kilometres. The distance is pu

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at rather more than one million kilometres, 2·67 times the distance of the moon, and this gives the sidereal period 119·207434 days. The mean daily motion is given to the ninth decimal of a degree. We cannot say here what is sometimes said of a long row of decimals: the more figures one gives, the greater the chance for some of them being correct. The anomalistic period, too, is given with sufficient accuracy; so is the excentricity and the longitude of the node; everything, in fact, to enable an astronomer to compute the position of our new satellite. It is, of course, quite possible that Dr. Waltemath fully believes in the existence of this object. In that case we should say, he is the only person who does; for when we ask on what kind of observation does this very accurate orbit rest, we find that the author has employed that large collection either in which persons have believed that they have seen objects of doubted value transiting the sun, whether bright or dark. He seems to have trusted to those wild and reckless assertions that are made from time to time about "ruddy fireballs" or "night suns," or other vague descriptions, and on such loose and inaccurate data he has unfolded his strange and wondrous tale. This hypothetical satellite ought to have been seen transiting the sun on February 3, and, if we have correctly apprehended the author, may even yet be seen on July 30.

OCCULTATION OF CERES.—The extremely rare phenomenon of the occultation of Ceres, on November 13 last, has been observed by M. Schorr, of Hamburg, and M. Harzer, of Kiel. A note in the *Bulletin de la Société Astronomique* for February states that only the reappearance was possible to be observed, and it was noted that the increase of light during one or two seconds was gradual, and not sudden as in the case of a star.

A REMARKABLE OBJECT.—In Circular No. 46 from the Wolsingham Observatory, dated February 16, the Rev. T. E. Espin states that "a remarkable object hitherto unrecorded was discovered on January 16, and seen on three other nights. It is elliptical, one degree long, major axis 336°, and rather resembles some obscuring medium than a nebula, and is, I believe, unique." This object is situated on the northern border of Perseus adjoining the constellation of Auriga, its position being:

R.A. 4h. 26m. 0s., Decl. + 50° 44′ (1855).

VARIABLES IN STAR CLUSTERS.—Prof. Pickering, in Circular No. 24 from the Harvard College Observatory, states that "since the announcement made in Circular Nos. 2 and 18, of variables discovered in clusters, a further examination of the clusters ω Centauri, Messier 3, Messier 5, and N.G.C. 7078 has been made by Prof. Bailey. As a result, the numbers of known variables in these clusters have been increased by 62, 19, 22 and 24, respectively, making the total numbers 122, 132, 85 and 51, or 390 in all four clusters. Adding to these the 47 already announced in other clusters, makes the total number 437."

In the *Bulletin de la Société Astronomique*, M. A. Chévremont announces the discovery of a variable star upon the eastern margin of the globular cluster in Aquarius (M. 2). Whilst the stars of the cluster are of about the 15th magnitude, this new variable rises to mag. 12, at maximum, and is probably distinct from the cluster itself. It has a period of about thirty days, gradually decreasing from maximum to its minimum of mag. 14, in about fifteen days; the actual form of the light-curve is, however, only vaguely known, other observations being required to replace the hiatus of its ascent.

A LARGE REFLECTING TELESCOPE.—We learn from *Popular Science News* that another great telescope is approaching completion. In 1895 the Rev. John Peate commenced at Greenvill, Pennsylvania, the construction of a mammoth glass speculum for a reflecting telescope designed for the American University, Washington. After two years of arduous toil, Dr. Peate has given the great mirror its final touches—that is, in grinding and polishing—and it is now ready for silvering and for the further and important stage of mounting. This large disc of glass is more than 61 inches in diameter.

PARALLAXES OF STARS.—From observations made at the Cape Observatory, Dr. Gill concludes that the parallax of α Centauri certainly lies between the limits 0″·74 and 0″·75. This is equivalent to a distance of 275,000 times the radius of the earth's orbit. In the same journal (*Bulletin de la Société Astronomique*), we are informed that Dr. Gill comes to the conclusion that the parallax of Rigel is not greater than 0″·01, hence the distance of this star is certainly more than 20 million times the distance of the sun; it has, therefore, a "light journey" of 320 years.

The same author, in the *Monthly Notices* for January, gives, from his most recent researches, the parallax of α Gruis as 0″·015 ± 0″·007.

From measures of the mean parallaxes of the stars β, γ, δ, ε and ζ in Ursa Major, M. Hoffler has obtained the small value of 0″·0165 ± 0″·011. This number indicates that the system formed by these stars is separated from the earth by such a distance that it would take 200 years for the light to reach us. The distance of β and ζ is at least 4 million times greater than that which separates the earth from the sun. From the calculations made by this astronomer, ε Ursæ Majoris would be a star forty times brighter than Sirius, which, at the present distances of the stars, is considered the most brilliant in the sky.

FURTHER EXPLORATIONS IN AMERICAN MOUNDS.[1]

THE greater part of this volume is occupied by Mr. Moore's account of his systematic exploration of the mounds on the Georgia coast, the Marquis de Nadaillac's short paper being added to draw attention to the parallelism between burial customs on both sides of the Atlantic. Mr. Moore's contribution is a worthy continuation of his previous work, and the classified results of his numerous excavations, accompanied by excellent diagrams and illustrative plates, form a welcome addition to the material already existing for purposes of comparative study. Americans have every reason to be satisfied with the manner in which the archæological investigation of their country is being carried out: such researches as these of Mr. Moore in Georgia, and those of Mr. Cushing among the Keys of Florida, reflect the greatest credit upon all who have contributed to bring them to a successful issue.

The general results of these explorations tend to confirm in a striking degree the conclusion that men in similar states of primitive culture hold similar views upon all the fundamental questions of life and death. Such resemblances are not merely confined to generalities; they may be observed in the most minute matters of detail. Thus not only does the puzzling coexistence of inhumation and incineration recur as frequently in American as in European barrows, but many peculiarities of interment, noticed by Canon Greenwell and others, are repeated in a very remarkable manner in these Georgian mounds. Amongst these peculiarities may be instanced the preference shown for the southern and eastern sides of mounds; the laying of unburned skeletons upon one side and in a contracted position; the presence of charcoal, and pigments like powdered hæmatite; the deposit of potsherds belonging to *different* broken vessels, and the protection of bodies by coverings of wood. But in spite of these numerous coincidences we are as far off as ever from discovering the psychological laws which regulated the disposal of the dead by primitive man. Mr. Moore found bodies in all kinds of positions. They were "flexed" upon one side, or extended at full length, sometimes in anatomical order, sometimes showing signs of having been transferred to the place of burial after the flesh had been removed by exposure to the air; bones of one or more skeletons were "bunched" in heaps; confused masses of bones belonging to many different persons occurred together, some being calcined, others not; there were "pockets" of cinerated remains; urn burials, both cremated and uncremated; and unburned bodies placed upon the sites of fires. In a word, the apparent confusion reaches an extreme degree, and almost the only regularities of association which Mr. Moore ventures to point out are the more frequent presence of implements and ornaments in the neighbourhood of confused masses of bones, their comparative scarcity with flexed burials, and their complete absence in the neighbourhood of extended skeletons, though these last were generally at the base of the mound, and were often placed in large artificial excavations. As to the general question of the simultaneous occurrence of inhumation and cremation, we must still, perhaps, fall back on the former hypothesis

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[1] *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, vol. xi. Part 1, Philadelphia, 1897. (1) "Certain Aboriginal Mounds of the Georgia Coast," by Clarence B. Moore. (2) "Inhumation and Incineration in Europe," by the Marquis de Nadaillac.

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